

REMARKS

The Office Action mailed February 1, 2011, has been received and carefully noted. Claims 1-6 and 8-11 are currently pending in the application and are presently under consideration. Claim 7 was previously canceled, and claims 12-33 were previously withdrawn from consideration. New claims 34-37 are added.

Please amend the claims as shown above. Support for the amendments can be found in at least paragraphs [0022], [0025], and [0037] of the Specification and figure 5 of the drawings.

Favorable reconsideration of the pending claims is respectfully requested in view of the following comments.

Examiner Interview

An Examiner Interview was conducted on April 28, 2011, including Examiner Asfand Sheikh and Applicant's attorneys Jonathan Miller and Kim Leung. In the Interview, the subject matter of claim 1 was discussed, in particular, "detecting a skipping of a range of the constraint." The Examiner agreed that Huang et al. (U.S. Patent No. 6,321,363) does not teach this limitation and that a further search will be conducted once the response is received. The Examiner requested that the Applicant explain "detecting a skipping of the range of the constraint" in the response.

Rejection of Claims Under 35 U.S.C. § 103

Claims 1-6 and 8-11 are rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Benda et al. (U.S. Patent No. 6,937,992 B1) ("Benda") in view of Cappellini (U.S. Publication No. 2003/0014286 A1) ("Cappellini") and Huang et al. (U.S. Patent No. 6,321,363 B1) ("Huang"). The Applicant respectfully requests withdrawal of this rejection because Benda, Cappellini, and Huang do not teach or suggest all of the limitations of the claims.

To establish a *prima facie* case of obviousness, the Examiner must provide some articulated reasoning to support the conclusion of obviousness. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

Independent claim 1 recites, among other limitations, “detecting a skipping of the range of the constraint.” As recited in new claim 34, “the range of the constraint is skipped when the loading of a shipping unit does not exceed a minimum bound of the constraint and adding another shipping unit exceeds the maximum bound of the constraint.” The Examiner requested in the above-referenced Examiner Interview that the Applicant reiterate some of the explanation related to the details of a skipped range. An exemplary simplified scenario was discussed. In this example, a constraint is imposed on a shipment that it has a total weight in the range of 2500 to 2800 pounds. The minimum bound of the constraint in this case is 2500 pounds, and the maximum bound of the constraint is 2800 pounds. An example shipping unit has a weight of 1000 pounds. If two shipping units are loaded, the total weight is 2000 pounds, which is less than the minimum bound of 2500 pounds. If three shipping units are loaded, the total weight is 3000 pounds, which is greater than the maximum bound of 2800 pounds. These load configurations make it impossible to meet the required range of the constraint because the range of the constraint is skipped between the loading of two shipping units and the loading of three shipping units.

To detect a skipping of the range of the constraint, the simulation is monitored to detect the skipping of the range. The system is thus aware of a previous state of the simulation and a current state of the simulation. During the simulation, if the range of the constraint is not satisfied and the range of the constraint is not skipped, that load configuration is stored as the previous state. In the example above, the load configuration of two shipping units would be stored as the previous state. The simulation would then continue by adding another shipping unit. The loading of three shipping units causes the range of the constraint to be skipped. The system detects that the range of the constraint is skipped because the previous state indicates that the load configuration of two shipping units did not satisfy the range of the constraint and the current state of the simulation (i.e., a load configuration of three shipping units) indicates that the constraint is skipped.

The Examiner acknowledges that Benda and Cappellini fail to teach or suggest “detecting a skipping of the range of the constraint and adjusting the simulating of the loading of the shipment in response to the skipping,” as recited in claim 1. The Examiner relies on Huang to cure these defects of claim 1 and cites column 7 lines 31-37 of Huang in support of his position.

The Examiner notes that “invariant blocks are interpreted to be constrains [sic] that are evaluated and detected and are not re-computed during simulation (e.g. adjusted).” See Final Office Action mailed February 1, 2011, page 5. The cited section of Huang discusses skipping invariant blocks for re-simulation of electronic circuit designs. The Applicant does not discern and the Examiner does not clarify how an invariant block teaches the recited element of “the range of the constraint.” Rather, an invariant block is a portion of a circuit that is independent of change. See Huang, column 4 lines 13-16. Huang does not mention that an invariant block includes any range of a constraint. Furthermore, Huang does not detect a skipping of the invariant block. Rather, Huang classifies circuit portions as invariant, variant, or conditional, based on initial simulations, and then skips over the invariant portions for subsequent simulations. See Huang, column 5 lines 19-41. Huang does not monitor the simulation to detect that the invariant block has been skipped. Because Huang does not detect that the invariant block has been skipped, Huang does not adjust the simulation of the circuit in response to the skipping.

For at least the above reasons, Huang does not teach “detecting a skipping of the range of the constraint and adjusting the simulating of the loading of the shipment in response to the skipping,” as recited in claim 1. Further, as discussed above, the Examiner agreed in the Examiner Interview that Huang does not teach “detecting a skipping of the range of the constraint.” Accordingly, reconsideration and withdrawal of the obviousness rejection of claim 1 are respectfully requested.

Claims 2-6 and 8-11 depend from independent claim 1 and thus incorporate the respective limitations thereof. For at least the reasons mentioned in regard to claim 1, these claims are not obvious over the cited references. Accordingly, reconsideration and withdrawal of the rejection of claims 2-6 and 8-11 are respectfully requested.

New Claims 34-37

New claim 34 depends from independent claim 1 and thus incorporates the limitations thereof. New claims 35 and 36 depend from claim 34 which depends from independent claim 1 and thus incorporate the limitations thereof. New claim 37 depends from claim 36 which depends from claim 34 which depends from independent claim 1 and thus incorporates the limitations thereof. For at least the reasons mentioned above in regard to claim 1, new claims

34-37 are not obvious over the cited references. Accordingly, the Applicant believes that the new claims are in condition for allowance.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes a telephone conference would be useful in moving the case forward, he is encouraged to contact the undersigned at (310) 207-3800.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

Date: 5/18/2011

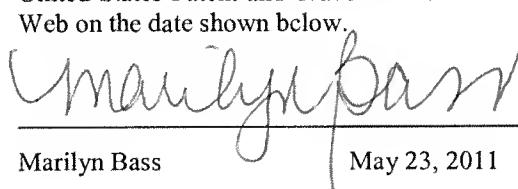
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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted to the United States Patent and Trademark Office electronically via EFS Web on the date shown below.



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May 23, 2011